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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/652,750	08/31/2000	Robert T. Baum	Bell-29	3522

7590

03/13/2002

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EXAMINER

NGUYEN, PHUONGCHAU BA

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 03/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/652,750

Applicant(s)

BAUM ET AL.

Examiner

Phuongchau Ba Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1-2-2002 amendment.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8, 14, 16-20, 23, 26-28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The new matter is "a unique bit string that is independent of a layer 2 destination address"(claims 1, 5, 14, 20, 23, 28) which is not supported by the original disclosure. Claims 2-4, 6-8, 16-19, 26-27 are also rejected because they depended on claims 1, 5, 14, 20, 23, 28.

According to pages 17-18 of the original disclosure, it describes that the unique bit string (also called as context information; lines 20-29, page 17) depends solely on the logical port (which is the destination) within the network {line 30, page 17}. The context information may include packet independent part associated with a logical port (destination) {lines 4-5, page 18}. Further on the bridging paragraph of pages 18-19, it describes that the layer 2 header information [e.g., the source and destination layer 2 (e.g. MAC) addresses] may be removed and a unique bit string (or context information), a part of which is associated with a logical port or interface (which is associated with the physical port--destination). The context information may include a packet independent part associated with a logical port (destination). Furthermore on the first

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paragraph of page 19, it describes that the destination layer 2 (MAC) address is replaced with the layer 2 address of customer device associated with the port.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-2 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Ames et al (USP 6,058,429).

Regarding claim 1, Ames teaches a method for provisioning services (ULAN services) to packets sourced from a number of clients device (106, 108, 114, 116, 122 & 124), each of the packets having at least a part of the layer 2 header (data link layer destination address of the router) replaced with a unique bit string (data link layer destination address of the second device). In Ames' system, when the proxy forwarding

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mechanism of the learning switch 200 receives a packet from a source device client 114, it replaces the data link destination address of the router in layer 2 header of the incoming packet with the data link layer destination address of the second device, e.g. server 104). See col. 3, lines 41-49 and col. 10 line 14 to col. 12, line 38. The method comprises the step of determining whether or not the packet is entitled to access a particular service (switch 134 determines whether the received packet is entitled to access server 104) based on at least the unique bit string (data link layer destination address of the server 104). After the switch 134 determines ^{no} that the packet is entitled to access a server 104, the packet is then forwarded to server 104.

Regarding claim 2, Ames also teaches that when the router 124 receives the packet from client 114, router 124 replaces the layer 2 source address of the incoming packet with the layer 2 source address of port 130 (one of the interfaces of router 124) before forwarding the packet to server 104. See col. 2, lines 46-55.

Regarding claim 17, Ames discloses at least a part of the layer 2 header (data link layer destination address of the router) replaced with a unique bit string (data link layer destination address of the second device). The address destination of the second device indicates the identifier geographic location and physical unit of the second device.

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4. Claims 1-4, 13 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Gleeson et al (USP 5,959,989).

Regarding claim 1, Gleeson teaches that a part of the layer 2 header is replaced with a unique bit string (see the combination of M-VLAN ID 612 and VLAN designation 620 in figure 6) by the intermediate devices (220-223). Each intermediate device determines whether or not the packet is destined to a member of the VLAN the device manages (entitled to access a particular service).

Regarding claim 2, the unique bit string (VLAN designation) represents one of the virtual LAN interface (logical interface)

Regarding claim 3, a portion of the unique bit string correspond to a M-VLAN ID (VPNUI).

Regarding claim 4, a portion of the unique bit string correspond to a VLAN designation (VPN-INDEX).

Regarding claim 13, Gleeson also teaches the VLAN designation table 240 (access control list) which is used by the intermediate device to determine as to whether or not the packet having a particular VLAN designation is entitled to access the VLAN the device manages.

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Regarding claim 25, Gleeson discloses at least a part of the layer 2 header (MAC header) replaced with a unique bit string (M-VLAN ID or VLAN designation; fig.6). The M-VLAN ID and VLAN designation indicates the identifier geographic location and physical unit {see also figs.2}.

Claim Rejections - 35 U. S. C. § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-6, 14, 16, 18-19, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al (USP 6,058,429) in view of Haddock (USP 6,104,700).

Regarding claims 5 and 14, Ames fails to teach the determination of a service level of a packet based on a portion of at least one of layer 3 address or the unique bit string (layer 2 address) of the packet and forwarding the packet to the queue associated with the determined service level. However, Haddock teaches such determination. Specifically, Haddock teaches a forwarding device (could be a switch or a router) which determines the quality of service QoS level (a service level) of an incoming packet based on either its IP address (layer 3 address) or MAC address (layer 2 address). See col. 5, lines 31-49. Once the determination is made, the packet is forwarded to a QoS

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queue associated with the determined QoS level. See figure 2. This mechanism ensures quality of service for various QoS levels, thereby enhancing system performance. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Haddock's teaching of determining a service level of a packet based on either IP address (layer 3 address) or MAC address (unique bit string) of the packet and forwarding the packet to the queue associated with the determined service level in Ames' system with the motivation being to provide quality of service for various QoS levels and enhance system performance.

Regarding claim 6, Ames also teaches that when the router 124 receives the packet from client 114, router 124 replaces the layer 2 source address of the incoming packet with the layer 2 source address of port 130 (one of the interfaces of router 124) before forwarding the packet to server 104. See col. 2, lines 46-55.

Regarding claims 16, 18 and 26, Ames does not explicitly disclose that the layer 2 header is an Ethernet header. However, Ames discloses transmission of switching packets between VLANs. Thus, the layer 2 header of the switching packet between VLANs is an Ethernet header. This feature is well known in the art. Also, since each of the packets having at least a part of the layer 2 header (data link layer destination address of the router) replaced with a unique bit string (data link layer destination address of the second device), thus the modified packet header is the packet header

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with the replaced destination address of the second device and there is no modification in bit-size of the layer 2 header.

Regarding claims 19 and 27, Ames discloses at least a part of the layer 2 header (data link layer destination address of the router) replaced with a unique bit string (data link layer destination address of the second device). The address destination of the second device indicates the identifier geographic location and physical unit of the second device.

7. Claims 5-8 and 14 are rejected under 35 U.S. C. 103(a) as being unpatentable over Gleeson et al (USP 5,959,989) in view of Haddock (USP 6,104,700).

Regarding claims 5 and 14, Gleeson fails to teach the determination of a service level of a packet based on a portion of at least one of layer 3 address or the unique bit string (layer 2 address) of the packet and forwarding the packet to the queue associated with the determined service level. However, Haddock teaches such determination. Specifically, Haddock teaches a forwarding device (could be a switch or a router) which determines the quality of service QoS level (a service level) of an incoming packet based on either its IP address (layer 3 address) or MAC address (layer 2 address). See col. 5, lines 31-49. Once the determination is made, the packet is forwarded to a QoS queue associated with the determined QoS level. See figure 2. This mechanism ensures quality of service for various QoS levels, thereby enhancing system performance. Thus, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to apply Haddock's teaching of determining a service level of a packet based on either IP address (layer 3 address) or MAC address (unique bit string) of the packet and forwarding the packet to the queue associated with the determined service level in Gleeson's system with the motivation being to provide quality of service for various QoS levels and enhance system performance.

Regarding claim 6, the unique bit string (VLAN designation) represents one of the virtual LAN interface (logical interface)

Regarding claim 7, a portion of the unique bit string correspond to a M-VLAN ID (VPNOUI).

Regarding claim 8, a portion of the unique bit string correspond to a VLAN designation (VPN-INDEX).

8. Claims 9-12, 15, 22, 24 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gleeson et al (USP 5,959,989) in view of Murthy et al (USP 5,610,905).

Regarding claims 9 and 15, Gleeson also teaches copying the packet to generate a duplicate packet in the case when the packet is a multicast packet. Gleeson fails to teach the monitoring port and the forwarding of the duplicate packet to the monitoring port. However, such monitoring port is taught by Murthy. Specifically, Murthy

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teaches the monitoring port at the switch for the purpose of monitoring the switch and perform other management tasks. The monitoring port also receives a duplicate packet. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Murthy's teaching monitoring port in Gleeson's switch with the motivation being to enable the monitoring the switch and performing other management tasks, thereby enhancing system performance.

Regarding claim 10, the unique bit string (VLAN designation) represents one of the virtual LAN interface (logical interface)

Regarding claim 11, a portion of the unique bit string correspond to a M-VLAN ID (VPNUI).

Regarding claim 12, a portion of the unique bit string correspond to a VLAN designation (VPN-INDEX).

Regarding claims 22 and 30, Gleeson discloses at least a part of the layer 2 header (MAC header) replaced with a unique bit string (M-VLAN ID or VLAN designation; fig.6). The M-VLAN ID and VLAN designation indicates the identifier geographic location and physical unit {see also figs.2}.

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Regarding claims 24 and 29, Gleeson does not explicitly disclose that the layer 2 header is an Ethernet header. However, Gleeson discloses transmission of multicast packets between VLANs. Thus, the layer 2 header of the multicast packet between VLANs is an Ethernet header. This feature is well known in the art. Also, since each of the packets having at least a part of the layer 2 header replaced with a unique bit string (combination of M-VLAN ID and VLAN designation; fig.6), thus the modified packet header is the packet header with the replaced VLAN designation (see fig.1c) that associated with multicast-VLAN designations (see fig.6) and there is no modification in bit-size of the layer 2 header.

9. Applicant's arguments filed 1-7-2002 have been fully considered but they are not persuasive.

A/. Applicants argued in second paragraph on pages 10-11 and first paragraph on page 16, page 17 (paragraph 3) that the unique bit string is independent of a destination layer 2 address is not found in the references (Ames, Gleeson, Haddock, Murphy) that are used for establishing the 102 & 103 rejections.

In reply, the newly added limitation such as "the unique bit string is independent of a destination layer 2 address" is not supported by the original disclosure. Therefore, applicants' argument is not relevant.

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B/. Applicants argued in second paragraph of page 10 that Ames does not teach determining whether or not a packet is entitled to access a particular service. Further on the bridging paragraph of pages 10-11, applicants argued that determining whether or not a packet is addressed to a particular device is not the same as determining whether or not the packet is entitled to go to the addressed device.

In reply, there is no difference between the processing step of determining whether the packet is entitled to go to the addressed device (as claimed) from the processing step of determining whether or not a packet is addressed to a particular device (as taught by Ames) because it is not seen how claim language having a particular function to perform the determining the entitlement of the packet to go to the addressed device of determining whether the packet is entitled to go to the addressed device (as claim) which would be distinguished from Ames' teaching of determining whether the packet is addressed to a particular device.

C/. Applicants argued on third paragraph of page 12 regarding claims 1 & 13 that Gleeson does not teach replacing a part of the layer 2 header with a unique bit string, or does the Gleeson teach determining, using the unique bit string, whether or not a packet is entitled to a particular service.

In reply, Gleeson does teach replacing a part of the layer 2 (MAC) header with a unique bit string (MAC/destination address that is associated with the port of the device; col.8, lines 19-28); Gleeson does teach the intermediate devices determining, using the unique bit string (MAC/destination address of the port of the device, i.e., M-VLAN ID

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612 and VLAN designation 620; see fig.6; also see col.15, lines 50-64), whether or not a packet is entitled to a particular service {col.8, lines 34-58}.

D/. Applicants argued on page 13 (paragraph 1) and page 18 (paragraph 1) that prepending information to a packet is not the same as replacing bits in a packet with such information (layer 2 header, emphasis added).

In reply, Gleeson does disclose that for determining entity of packet 402a, the multicast frame 402c having a part of its layer header (i.e. MAC address which includes VLAN field 420, start field, MAC destination address field 414, MAC source address field 416 and end field; col.13, lines 19-27) being deleted (replaced) by Multicast VLAN field 422 {col.13, lines 62-64}.

F/. Applicants argued on the bridging paragraph of pages 13-14, and page 18 (paragraph 2) that Gleeson does not disclose determining using the unique bit string, whether or not packet is entitled to a particular service.

In reply, Gleeson does teach the intermediate devices determining, using the unique bit string (MAC/destination address of the port of the device, i.e., M-VLAN ID 612 and VLAN designation 620; see fig.6; also see col.15, lines 50-64), whether or not a packet is entitled to a particular service {col.8, lines 34-58}. Gleeson added that for doing so would prevent entities having a particular VLAN designation from subscribing to multicast messages to which they not entitled {col.3, lines 44-55}.

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G/. Applicants argued on page 18 (paragraph 3) that a multicast virtual LAN identifier does not teach a virtual private network organizational universal identifier.

In reply, there is no difference between the multicast virtual LAN identifier as taught by Gleeson and the virtual private network organizational universal identifier as claimed because virtual private network organizational universal identifier does not have any function/structure to be distinguished from the multicast virtual LAN identifier as taught by Gleeson.

H/. Applicants argued on page 19 (paragraph 1) and page 20 (paragraph 2) that Gleeson and Murphy do not teach “determining whether or not a packet belong to a group of **packets**” to be copied for purpose of monitoring based on a unique bit string which has replaced at least a part of a layer 2 header.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., determining whether or not a packet belong to a group of **packets**) are not recited in the rejected claim(s).

I/. Applicants argued on the bridging paragraph of pages 20-21 that Gleeson and Murphy do not teach “determining whether or not to copy packets for monitoring”.

In reply, applicant is directed to figure 1 of Murphy wherein the monitoring port 10 is used for monitoring the switch and Gleeson discloses copying the packet to generate

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a duplicate packet in case when the packet is a multicast packet {col.10, lines 53-64; col.14, lines 29-36}.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is 703-305-0093. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 703-308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.



Phuongchau Ba Nguyen
Examiner
Art Unit 2665

March 11, 2002



HUY D. VU
PRIMARY EXAMINER